

	Type	L #	Hits	Search Text	DBs
1	IS&R	L1	2136	(700/?).CCLS.	US- PGPUB; USPAT
2	BRS	L2	112	1 and production near8 (control or monitor)	USPAT
3	BRS	L3	0	2 and (calibration or standard) near8 curve	USPAT
4	BRS	L4	3	2 and (calibration or standard) with curve	USPAT
5	BRS	L5	3	1 and chemical near8 process near8 (control? or monitor?)	USPAT
6	BRS	L6	3	1 and chemical near8 (process or production) near8 (control? or monitor?)	USPAT
7	BRS	L7	6583	chemical near8 (process or production) near8 (control\$9 or monitor\$9)	USPAT
8	BRS	L8	284	7 and (calibration or standard) near8 curve	USPAT
9	BRS	L9	297	7 and (calibration or standard) with curve	USPAT
10	BRS	L10	418	7 and standard near8 (error or deviation or tolerance)	USPAT
11	BRS	L11	136	7 and standard near8 (error or deviation or tolerance) with measur\$9	USPAT
12	BRS	L12	970	7 and infrared	USPAT
13	BRS	L13	44	11 and infrared	USPAT
14	BRS	L14	9977	chemical near8 (process or production) near8 (control\$9 or monitor\$9)	US- PGPUB; USPAT
15	BRS	L15	52	14 and estimat\$9 with standard near8 (error or deviation or tolerance)	US- PGPUB; USPAT
16	BRS	L16	288	14 and estimat\$9 with (error or deviation or tolerance)	US- PGPUB; USPAT
17	BRS	L17	91	14 and absorbance near8 spectrum	US- PGPUB; USPAT

	Type	L #	Hits	Search Text	DBs
18	BRS	L18	5	15 and absorbance near8 spectrum	US-PGPUB; USPAT
19	BRS	L19	9	16 and absorbance near8 spectrum	US-PGPUB; USPAT
20	BRS	L20	1	14 and differentiation near8 curve with infrared near8 spectrum	US-PGPUB; USPAT
21	BRS	L21	6	14 and compar\$9 near8 absorbance near8 spectrum	US-PGPUB; USPAT
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2 FILES SEARCHED...
L1 5432 CHEMICAL (8W) (PROCESS OR PRODUCTION) (8W) (CONTROL? OR MONITOR?)
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=> s l1 and (calibration or standard) (8w) curve
L2 1 L1 AND (CALIBRATION OR STANDARD) (8W) CURVE

=> s l1 and estimat? (8w) (error or deviation or tolerance)
L3 16 L1 AND ESTIMAT? (8W) (ERROR OR DEVIATION OR TOLERANCE)

=> s l1 and compar? (8w) absorbance (8w) spectrum
L4 0 L1 AND COMPAR? (8W) ABSORBANCE (8W) SPECTRUM

=> s l1 and compar? (s) absorbance (8w) spectrum
L5 0 L1 AND COMPAR? (S) ABSORBANCE (8W) SPECTRUM

=> s l1 and differentiation (8w) curve (s) infrared (8w) spectrum
L6 0 L1 AND DIFFERENTIATION (8W) CURVE (S) INFRARED (8W) SPECTRUM

=> s l1 and differentiation (s) infrared (8w) spectrum
L7 0 L1 AND DIFFERENTIATION (S) INFRARED (8W) SPECTRUM

=> s l1 and standard (8w) (error or deviation or tolerance) (s) measur?
L8 4 L1 AND STANDARD (8W) (ERROR OR DEVIATION OR TOLERANCE) (S) MEASUR?
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=> s l1 and compar? (s) absorbance (s) spectrum
L9 0 L1 AND COMPAR? (S) ABSORBANCE (S) SPECTRUM

=> s l1 and compar? (s) spectrum
L10 9 L1 AND COMPAR? (S) SPECTRUM

=> display l10 1-9 ibib abs

L10 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:147593 CAPLUS
DOCUMENT NUMBER: 142:399569
TITLE: X-ray photoelectron spectroscopy studies of graphite powder and multiwalled carbon nanotubes covalently modified with Fast Black K: evidence for a chemical release mechanism via electrochemical reduction
AUTHOR(S): Wildgoose, Gregory G.; Lawrence, Nathan S.; Leventis, Henry C.; Li, Jiang; Jones, Timothy G. J.; Compton, Richard G.
CORPORATE SOURCE: Physical and Theoretical Chemistry Laboratory, University of Oxford, Oxford, UK
SOURCE: Journal of Materials Chemistry (2005), 15(9), 953-959
CODEN: JMACEP; ISSN: 0959-9428
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal

LANGUAGE: English

AB The development of new materials from which to construct controlled chemical-release systems was an active area of research for the past 4 decades. Using XPS graphite powder and multiwalled C nanotubes (MWCNTs) covalently derivatized with 2,5-dimethoxy-4-[4-(nitrophenyl)azo]benzenediazonium chloride (FBK) or a derivative of FBK are important new micro and nano-scale materials for use as voltammetrically controlled chemical-release reagents in applications where the small size of the material is advantageous. By examining the N1s and O1s regions of the XPS spectra the authors can identify functionalities within the FBK moiety as well as hydroxyl, quinonyl and carboxylic acid functional groups present on the C surface. Comparison of the XPS spectra of the FBK derivatized C (FBK carbon) and FBK derivatized MWCNTs (FBK-MWCNTs) before and after electrochem. reduction reveals that cleavage of the azo-linkage within the FBK moiety occurs upon reduction in aqueous solution. The voltammetric cleavage of the azo-linkage induces chemical release of 1,4-phenylenediamine from the C surface, demonstrating the proof of concept for these novel materials. It is envisaged that derivs. of these materials could be used in vivo in a wide range of areas including medical diagnosis and targeted drug-delivery systems as well as in in vitro applications such as anal. chem., sensor technol. and industrial process monitoring and control.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:355991 CAPLUS
TITLE: Chemical mechanical polishing endpoint detection
INVENTOR(S): Kaushal, Tony S.; Dam, Chuong Quang; Hu, Yongqi
PATENT ASSIGNEE(S): Applied Materials, Inc., USA
SOURCE: U.S. Pat. Appl. Publ.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003087586	A1	20030508	US 2001-5658	20011107
US 6709314	B2	20040323		

PRIORITY APPLN. INFO.: US 2001-5658 20011107

AB Endpoint of a chemical mechanical polishing process is detected by monitoring acoustical emissions produced by contact between a polishing pad and a wafer. The acoustic information is resolved into a frequency spectrum utilizing techniques such as fast Fourier transformation. Characteristic changes in frequency spectra of the acoustic emissions reveal transition in polishing between different material layers. CMP endpoint indicated by a change in the acoustic frequency spectrum is validated by correlation with other sensed properties, including but not limited to time-based changes in amplitude of acoustic emissions, frictional coefficient, capacitance, and/or resistance. CMP endpoint revealed by a change in acoustic frequency spectrum can also be validated by comparison with characteristic frequency spectra obtained at endpoints or polishing transitions of prior operational runs.

L10 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1974:77546 CAPLUS
DOCUMENT NUMBER: 80:77546
TITLE: Alkali metal and electrochemical reductions of dibenzoylbenzenes
AUTHOR(S): Campbell, James A.; Koch, Russell W.; Hay, James V.;

CORPORATE SOURCE: Ogliaruso, Michael A.; Wolfe, James F.
Dep. Chem., Virginia Polytech. Inst., Blacksburg, VA,
USA
SOURCE: Journal of Organic Chemistry (1974), 39(2), p 146-52
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The 3 isomeric dibenzoylbenzenes were found to react with an equiv of K in 1,2-dimethoxyethane (monoglyme) or in NH₃ to form radical anions as shown by comparison of their ESR spectra with those of the radical anions produced from the 3 isomers by controlled-potential electrolysis in monoglyme. Treatment of p-dibenzoylbenzene (I) with 2 equiv of K in monoglyme or in NH₃ affords the diamagnetic dianion, as evidenced by protonation, alkylation, and carboxylation at 1 of the original carbonyl carbons. The chem. and electrochem. reversibility of this 2-electron process was demonstrated by controlled-potential redox expts. and air oxidation to regenerate I. Reaction of I with 2 equiv of Li in NH₃ produces a mixture of the starting ketone and the diastereomeric diols resulting from reduction of both carbonyl groups. Treatment of o-dibenzoylbenzene (II) with 2 equiv of K in monoglyme or in NH₃ leads to predominate formation of 10-phenyl-10-hydroxy-9-anthrone, while similar redns. of II with K in monoglyme-tert-amyl alc. or with Li in NH₃ afford mainly 1,3-diphenylisobenzofuran. Exposure of m-dibenzoylbenzene to 2 equiv of K in monoglyme produces a paramagnetic intermediate, which appears to be the radical trianion.

L10 ANSWER 4 OF 9 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2006(28):8557 COMPENDEX
TITLE: Application of multivariate curve resolution to
chemical process control
of an esterification reaction monitored by
near-infrared spectroscopy.
AUTHOR: Blanco, Marcelo (Department of Chemistry Faculty of
Sciences Universitat Autònoma de Barcelona, 08193
Bellaterra, Barcelona, Spain); Castillo, Miguel;
Peinado, Antonio; Beneyto, Rafael
SOURCE: Applied Spectroscopy v 60 n 6 June 2006 2006.p 641-647
CODEN: APSPA4 ISSN: 0003-7028
PUBLICATION YEAR: 2006
DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical
LANGUAGE: English

AN 2006(28):8557 COMPENDEX

AB Multivariate curve resolution-alternating least squares (MCR-ALS) methodology was applied to near-infrared spectroscopy (NIR) data for the esterification reaction between glycerol and a mixture of caprylic and capric acids. Batch reaction processes were conducted either at the laboratory scale or at an industrial plant, while NIR data were obtained from samples withdrawn during the reaction processes. The process has been monitored via two typical parameters for this type of reaction, namely, the acid value (AV) and the hydroxyl value (OHV). Spectral and concentration profiles were estimated by applying soft-modeling MCR-ALS to a column-wise augmented data matrix with pure spectra of the components, and concentration values for the acid were used as a soft-equality constraint. The estimated concentration profiles have been compared with the AV and OHV values, and the estimated spectral profiles were used to predict the concentration profiles for new batches. Good results have been obtained in terms of RMSE for the prediction of AV and OHV. \$CPY 2006 Society for Applied Spectroscopy. 29 Refs.

L10 ANSWER 5 OF 9 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 1995(29):2799 COMPENDEX
TITLE: On-line monitoring by Raman spectroscopy: instrument
control and calibration.

AUTHOR: Vickers, Thomas J. (Florida State Univ., Tallahassee, FL, USA); Mann, Charles K.
MEETING TITLE: Optical Sensors for Environmental and Chemical Process Monitoring.
MEETING ORGANIZER: SPIE - Int Soc for Opt Engineering, Bellingham, WA USA
MEETING LOCATION: McLean, VA, USA
MEETING DATE: 09 Nov 1994-10 Nov 1994
SOURCE: Proceedings of SPIE - The International Society for Optical Engineering v 2367 1995.Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, USA.p 219-227
CODEN: PSISDG ISSN: 0277-786X
ISBN: 0-8194-1713-0
PUBLICATION YEAR: 1995
MEETING NUMBER: 22162
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Application
LANGUAGE: English

AN 1995(29):2799 COMPENDEX

AB We have demonstrated the utility of a fiber-optic Raman spectrometer with a charge coupled device (CCD) detector for measurements on a variety of chemical systems.Applications have included remote characterization of nuclear wastes, monitoring the heterogeneously catalyzed conversion of quadricyclane to norbornadiene, and monitoring emulsion and suspension polymerization reactions.Instrument control and calibration are essential elements for successful on-line monitoring.We wish to be able to compare measurements made with on- line systems with reference measurements made on laboratory instruments.Raman spectra are fundamental properties of molecular species.With suitable control and calibration of the measurement systems, spectra taken on different systems can be directly compared.We have built into our measurement system both hardware and software to provide automated wavenumber and intensity calibration and correction.The wavenumber axis calibration is based on measurement of the spectrum of atomic lines due to neon.The neon spectrum is provided by an inexpensive and compact lamp connected to the spectrometer by a dedicated optical fiber.In using atomic lines for calibration we must be able to determine peak positions reliably with an uncertainty much less than the sampling interval in the digitized spectrum.We describe a way of doing this as part of our calibration procedure.Intensity axis calibration involves correction for pixel-to-pixel and wavelength-dependent sensitivity variation of the detector and wavelength- and time-dependent throughput variations of the spectrograph and optical fiber probe. The data needed for these corrections are obtained by measurements with a calibrated white light source and with a standard sample. The white light source is a compact tungsten halogen bulb with its own dedicated optical fiber.The standard sample, a stable, readily available material, is incorporated into the measurement system at the sample end of the fiber optic probe.A computer-controlled, stepper motor driven positioner places the neon, white light and sample fibers at the focus of the spectrometer entrance optics as required.20 Refs.

L10 ANSWER 6 OF 9 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 2006:8945538 INSPEC
TITLE: Investigation of x-ray photoelectron spectroscopic (XPS), cyclic voltammetric analyses of WO3 films and their electrochromic response in FTO/WO3/electrolyte/FTO cells
AUTHOR: Sivakumar, R.; (Dept. of Phys., Alagappa Univ., India), Gopalakrishnan, R.; Jayachandran, M.; Sanjeeviraja, C.
SOURCE: Smart Materials and Structures (June 2006), vol.15, no.3, p. 877-88, 32 refs.
CODEN: SMSTER, ISSN: 0964-1726

SICI: 0964-1726(200606)15:3L.877:IPSC;1-G
Price: 0964-1726/06/030877+12\$30.00
Doc.No.: S0964-1726(06)22795-2
Published by: IOP Publishing, UK

DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical; Experimental
COUNTRY: United Kingdom
LANGUAGE: English

AN 2006:8945538 INSPEC

AB Electrochromic thin films of tungsten oxide (WO₃) were prepared on transparent conducting oxide substrates, i.e., fluorine doped tin oxide coated (FTO or SnO₂:F) glass and microscopic glass substrates by the electron beam evaporation technique using pure WO₃ (99.99%) pellets at various substrate temperatures (i.e., T_{sub} = room temperature (RT, 30°C), 100°C and 200°C). The films were prepared under vacuum of the order of 1 + 10⁻⁵ mbar. The room temperature prepared films were further post-heat-treated (Tanne) at 200 and 300°C for about 1 h in the vacuum environment. The prepared films are in monoclinic phase. The chemical composition has been characterized by using the XPS technique. The W 4f and O 1s core levels of WO₃ films have been studied on the samples. The obtained core level binding energies revealed the WO₃ films contained six-valent tungsten (W⁶⁺). The electrochemical nature of the films was studied by a three-electrode electrochemical cell in the configuration of FTO/WO₃/H₂SO₄/Pt, SCE, using the cyclic voltammetry (CV) technique. Electrochromic devices (ECDs) of the general type FTO/WO₃/electrolyte/FTO were studied. The films produced at higher substrate temperature show smaller modulation of the visible spectrum, compared with the films produced at lower temperatures. The significant chemical bonding nature associated with the coloring/bleaching process which follows the H⁺ ion incorporation in the film is studied by FTIR analysis. The W-O-W framework peak was observed at 563 cm⁻¹ and confirms the stability of the films in the electrochemical analysis. The results obtained from cyclic voltammetry technique and ECD cell characterization are used to emphasize the suitability for some applications of the solar control systems

L10 ANSWER 7 OF 9 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 2002:7326137 INSPEC
DOCUMENT NUMBER: A2002-17-6865-009; B2002-08-2530C-103
TITLE: Morphology and photoelectronic properties of InAs/GaAs surface quantum dots grown by metal-organic vapour-phase epitaxy

AUTHOR: Karpovich, I.A.; (Univ. of Nizhny Novgorod, Russia), Baidus, N.V.; Zvonkov, B.N.; Morozov, S.V.; Filatov, D.O.; Zdoroveishev, A.V.

SOURCE: Nanotechnology (Dec. 2001), vol.12, no.4, p. 425-9, 11 refs.

CODEN: NNOTER, ISSN: 0957-4484
SICI: 0957-4484(200112)12:4L.425:MPPI;1-S
Price: 0957-4484/01/040425+05\$30.00
Doc.No.: S0957-4484(01)27128-1
Published by: IOP Publishing, UK

Conference: 9th International Symposium on Nanostructures: Physics and Technology. 3rd Russian Workshop on Nanophotonics, St. Petersburg, and Nizhnii Novgorod, Russia, 18-22 June 2001 & 26-29 March 2001

DOCUMENT TYPE: Conference; Conference Article; Journal
TREATMENT CODE: Practical; Experimental
COUNTRY: United Kingdom
LANGUAGE: English

AN 2002:7326137 INSPEC DN A2002-17-6865-009; B2002-08-2530C-103

AB A comparative study of the surface morphology, photoluminescence, and photoelectric spectra of heterostructures with InAs/GaAs quantum dots (QDs) grown on the surface,

uncovered by etching away the cladding layer, and built in the GaAs matrix is reported. The red-shift of the ground transition energy in the surface QDs compared to the built-in ones has been shown to be related not only to relaxation of the elastic strain, but also to the differences in size, shape, and chemical composition of the nanoclusters. The method of photoelectric spectroscopy in a semiconductor/electrolyte system has been applied to monitor the process of etching of the cladding layer in situ. Using this method, controlled uncovering of the buried QDs was shown to be possible. In turn, this makes it possible to study the actual morphology of the buried quantum-size layers by atomic force microscopy

L10 ANSWER 8 OF 9 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 2000:6638361 INSPEC
DOCUMENT NUMBER: A2000-16-8280T-002; B2000-08-7230L-014
TITLE: Midwave-infrared semiconductor lasers
AUTHOR: Vurgaftman, I.; Bewley, W.W.; Felix, C.L.; Meyer, J.R.
(Naval Res. Lab., USA)
SOURCE: Compound Semiconductor (April 2000), vol.6, no.3, p.
60-5, 21 refs.
CODEN: COSEFP, ISSN: 1096-598X
SICI: 1096-598X(200004)6:3L.60:MISL;1-J
Published by: Franklin Publishing, USA
DOCUMENT TYPE: Journal
TREATMENT CODE: Application; General Review; Practical; Experimental
COUNTRY: United States
LANGUAGE: English

AN 2000:6638361 INSPEC DN A2000-16-8280T-002; B2000-08-7230L-014

AB While III-V semiconductor lasers emitting in the midwave-infrared (mid-IR) region of the electromagnetic spectrum, defined here as wavelengths between 3 μm and 5 μm , are immature compared to their near-IR counterparts, they are nonetheless advancing at a rapid pace. This is being driven in part by the race to develop a convenient (i.e. portable and noncryogenic) laser source for chemical sensing. Most chemicals in gas phase have "signature" mid-IR absorption lines that are spectroscopically narrow and orders of magnitude stronger than the overtone features in the near-IR. Once inexpensive mid-IR diode lasers displaying the required levels of performance finally become available, we may expect them to find use in a wide variety of contexts such as atmospheric pollution monitoring, leak detection, chemical process control, auto-exhaust monitoring, drug detection, and military-base cleanup. Other potential applications include range conduction band finding, IR illumination, IR countermeasures, and laser surgery

L10 ANSWER 9 OF 9 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 1996:5386007 INSPEC
DOCUMENT NUMBER: A1996-22-8670L-008
TITLE: Photoacoustic spectroscopy on trace gases with
continuously tunable CO2 laser
AUTHOR: Repond, P.; Sigrist, M.W. (Inst. of Quantum Electron.,
Eidgenossische Tech. Hochschule, Zurich, Switzerland)
SOURCE: Applied Optics (20 July 1996), vol.35, no.21, p.
4065-85, 59 refs.
CODEN: APOPAI, ISSN: 0003-6935
SICI: 0003-6935(19960720)35:21L.4065:PSTG;1-P
Price: 0003-6935/96/214065-21\$10.00/0
Published by: Opt. Soc. America, USA
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English

AN 1996:5386007 INSPEC DN A1996-22-8670L-008

AB A novel photoacoustic (PA) system that uses a continuously tunable

high-pressure CO₂ laser as radiation source is presented. A minimum detectable absorption coefficient of 10^{-6} cm⁻¹ that is limited mainly by the desorption of absorbing species from the cell walls and by residual electromagnetic perturbation of the microphone electronics has currently been achieved. Although a linear dependence of the PA signal on the gas concentration has been observed over 4 orders of magnitude, the dependence on energy exhibits a nonlinear behavior owing to saturation effects in excellent agreement with a theoretical model. The calibration of the laser wavelength is performed by PA measurements on low-pressure CO₂ gas, resulting in an absolute accuracy of $\pm 10^{-2}$ cm⁻¹. PA spectra are presented for carbon dioxide (CO₂), ammonia (NH₃), ozone (O₃), ethylene (C₂H₄), methanol (CH₃OH), ethanol (C₂H₅OH), and toluene (C₇H₈) in large parts of the laser emission range. The expected improvement in detection selectivity compared with that of studies with line-tunable CO₂ lasers is demonstrated with the aid of multicomponent trace-gas mixtures prepared with a gas-mixing unit. Good agreement is obtained between the known concentrations and the concentrations calculated on the basis of a fit with calibration spectra. Finally, the perspectives of the system concerning air analyses are discussed.